

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 881	15-00125-00-BR	WHITE	16	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99628	16+1=17 total sheets	

INDEX OF SHEETS

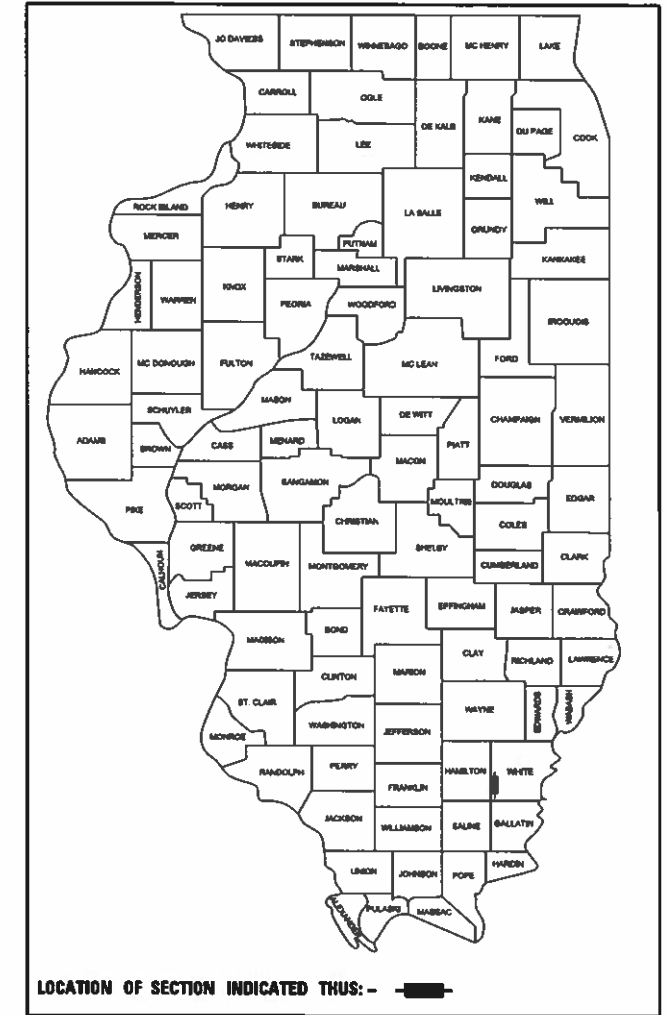
SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5.	CULVERT DETAILS
6.	BORINGS
7-16.	STATION CROSS SECTIONS

HIGHWAY STANDARDS:

000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
701901-08	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM
RURAL MINOR COLLECTOR FUNDING

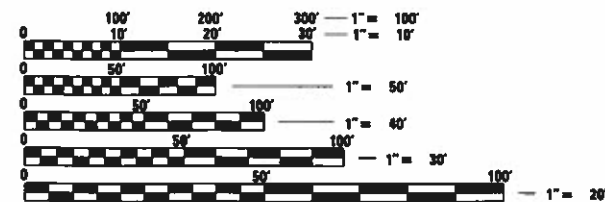
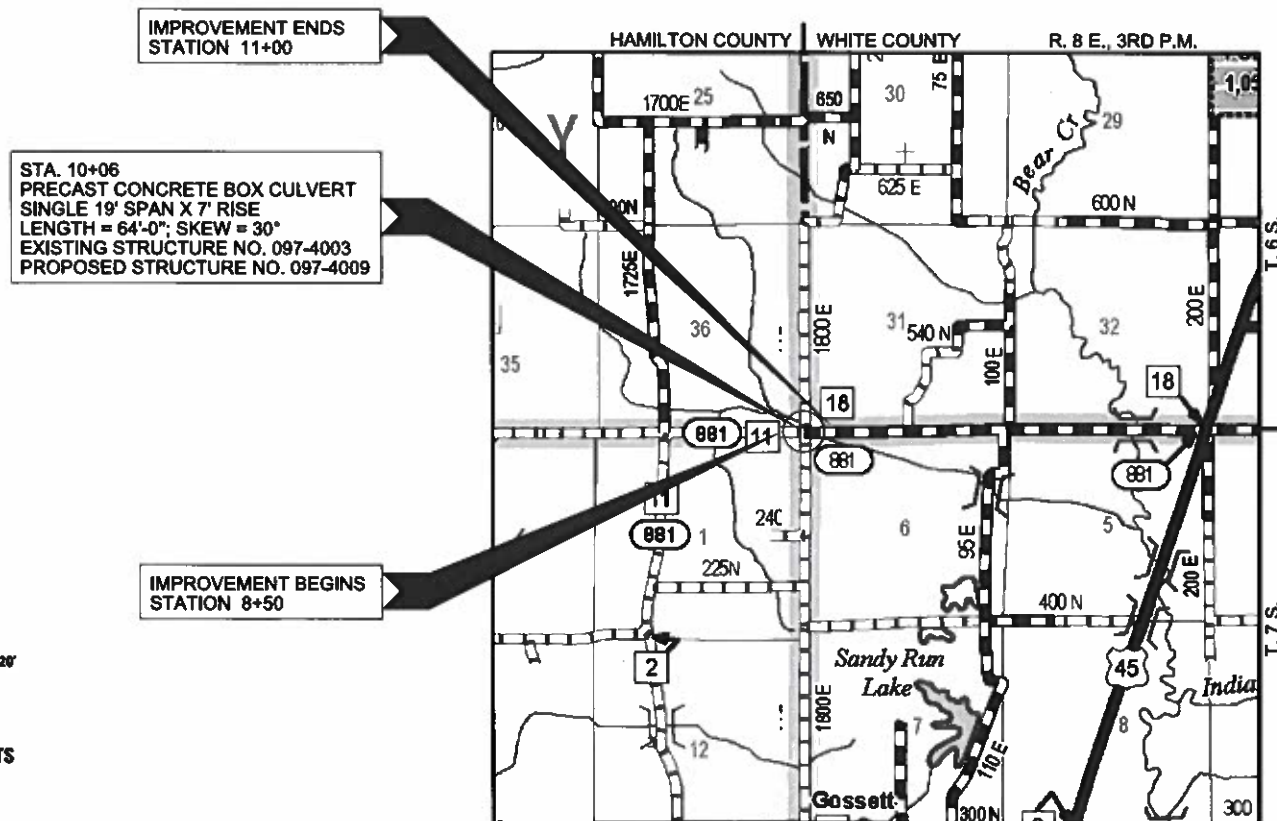
PROJECT 8C5U(883)
SECTION 15-00125-00-BR
WHITE COUNTY
F.A.S. 881 / C.H. 18
PROPOSED STRUCTURE NO. 097-4009
C-99-519-16



UTILITIES

FRONTIER COMMUNICATIONS
200 WEST CHERRY STREET
CARM, IL 62821

WAYNE WHITE ELECTRIC COOP
1501 WEST MAIN STREET
FAIRFIELD, IL 62037



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

FUNCTIONAL CLASSIFICATION: RURAL COLLECTOR
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 50 ADT

LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
NET LENGTH OF SECTION = 250 FEET = 0.047 MILES



WARNING

CALL 811 BEFORE YOU DIG
DIG NO: A2843378

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED *May 2 2019*
Brian A. Coy
COUNTY ENGINEER

PASSED *05/29 2019*
Keith Roberts
DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 04/05/2019

EXPIRES: 11/30/2019

HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hirengineering.com

PROJECT NUMBER: 17.0547.130
DATE: 04/05/19

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	48
^ 20200100	EARTH EXCAVATION	CU YD	280
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	200
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	415
^ 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
51500100	NAME PLATES	EACH	1
^ 54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	2
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	81
542D0235	PIPE CULVERTS, CLASS D, TYPE 1 30"	FOOT	52
67100100	MOBILIZATION	L SUM	1
^ X0900064	MEMBRANE WATERPROOFING FOR BURIED STRUCTURES	SQ YD	138
^ X1200140	PRECAST CONCRETE BOX CULVERT (SPECIAL)	FOOT	52
^ X2070302	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	500
^ X2090210	POROUS GRANULAR BACKFILL, SPECIAL	CU YD	60
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

GENERAL NOTES

- 1) ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED APRIL 1, 2016", (HERE IN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2019; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE DOCUMENTS.
- 2) ALL CLEARING, GRUBBING, FENCE REMOVAL, PAVEMENT REMOVAL, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. ALL AGGREGATE AND BITUMINOUS PAVEMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. REMOVAL AND DISPOSAL OF PAVEMENT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 3) WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- 4) ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- 5) THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES, WATER SERVICE LINES, GAS MAINS, AND OTHER UTILITY FACILITIES AS SHOWN ON THE PLANS ARE BASED ON FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- 6) THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES

AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE DUMPED RIPRAP	1.75 TON/CU YD
POROUS GRANULAR EMBANKMENT/BACKFILL	2.00 TON/CU YD
- 7) THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDED AREAS SHALL BE TOPSOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING TOP SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
- 8) THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER.

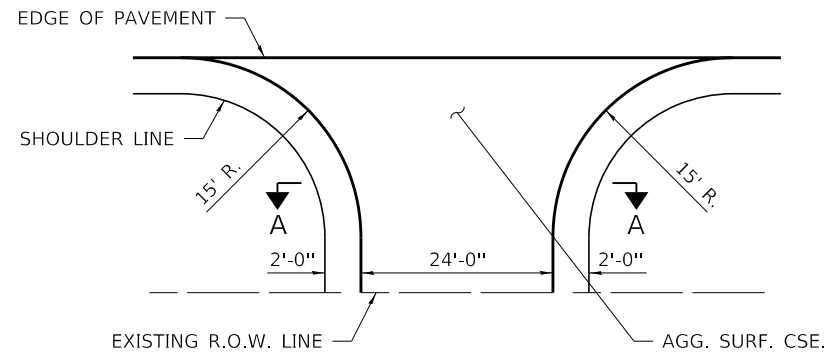
SEEDING, CLASS 2 (SPECIAL) =	0.30 ACRES
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- 9) ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 10) COMMITMENTS:

EARTHWORK SCHEDULE

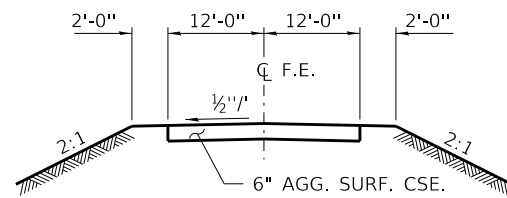
LOCATION	EARTH EXCAVATION	MISC. EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
F.A.S. 881 / C.H. 18 STA. 8+50.00 TO STA. 11+00.00	280		25.00%	100.00%	210	48	162
EXCAVATION FROM PGB		220	25.00%	75.00%	124		124
EXCAVATION FROM BOX		325	25.00%	75.00%	183	0	183
TOTAL	280	545			517	48	469
USE	280	545					470

WASTE 470 CU YDS

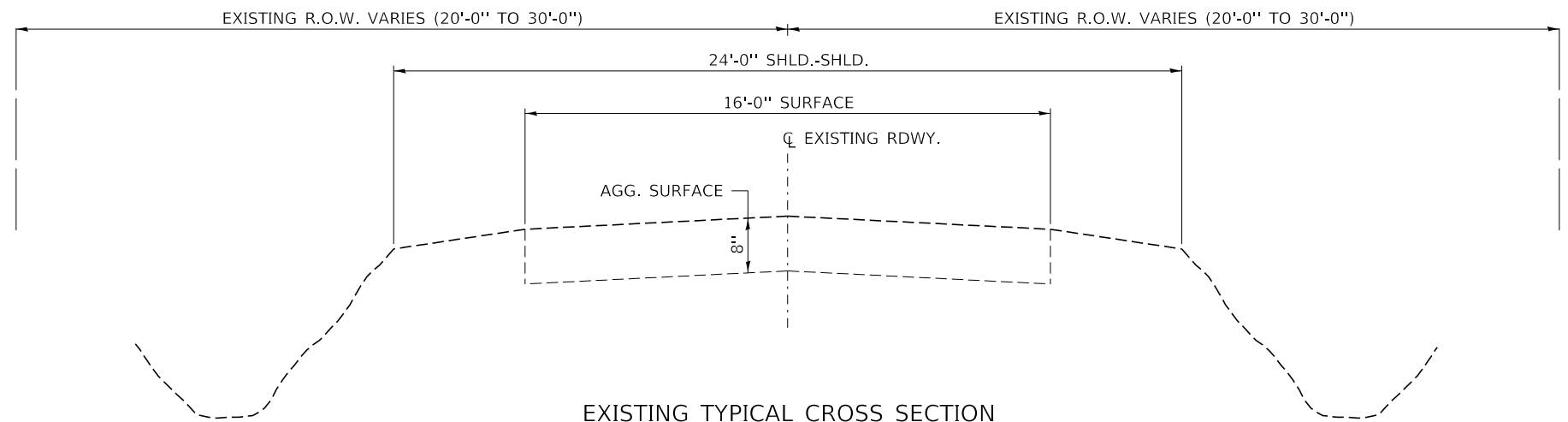
FILE NAME = 170547-shl-summary.dgn	USER NAME = rhostick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	SUMMARY OF QUANTITIES AND GENERAL NOTES			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3045 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = SCALES	DRAWN - M.M.P.	REVISED -					881	15-00125-00-BR	WHITE	16	2
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-000949	PLOT DATE = 6/5/2019	CHECKED - S.W.M.	REVISED -		CONTRACT NO. 99628			ILLINOIS FED. AID PROJECT #CSU(883)				
		DATE - 06/05/19	REVISED -		SCALE:	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.					



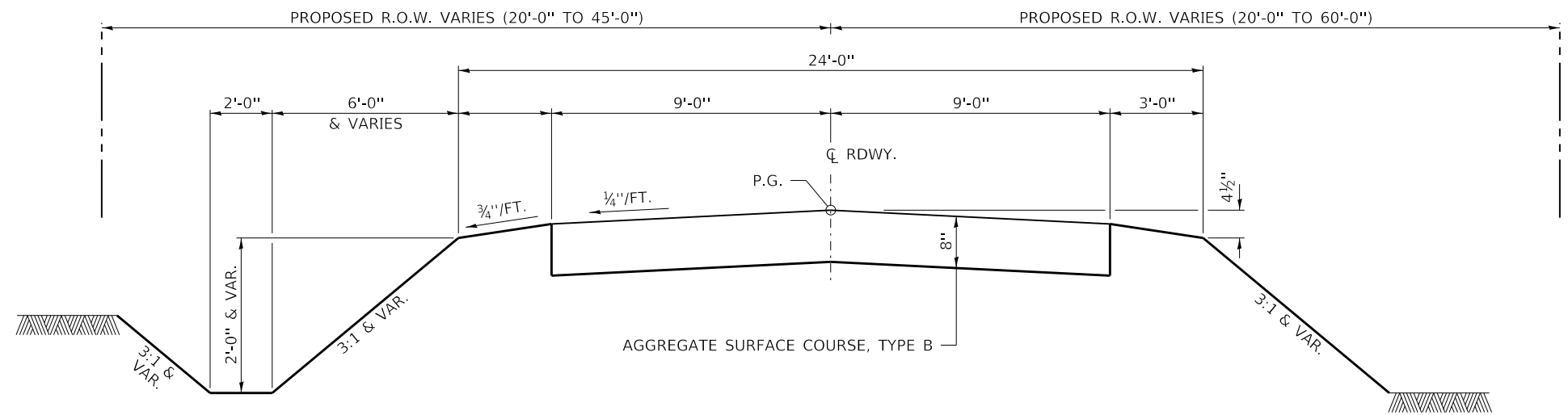
FIELD ENTRANCE DETAIL



SECTION A-A



EXISTING TYPICAL CROSS SECTION
STA. 9+00 TO 11+00



PROPOSED TYPICAL CROSS SECTION
STA. 9+00 TO 11+00

SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

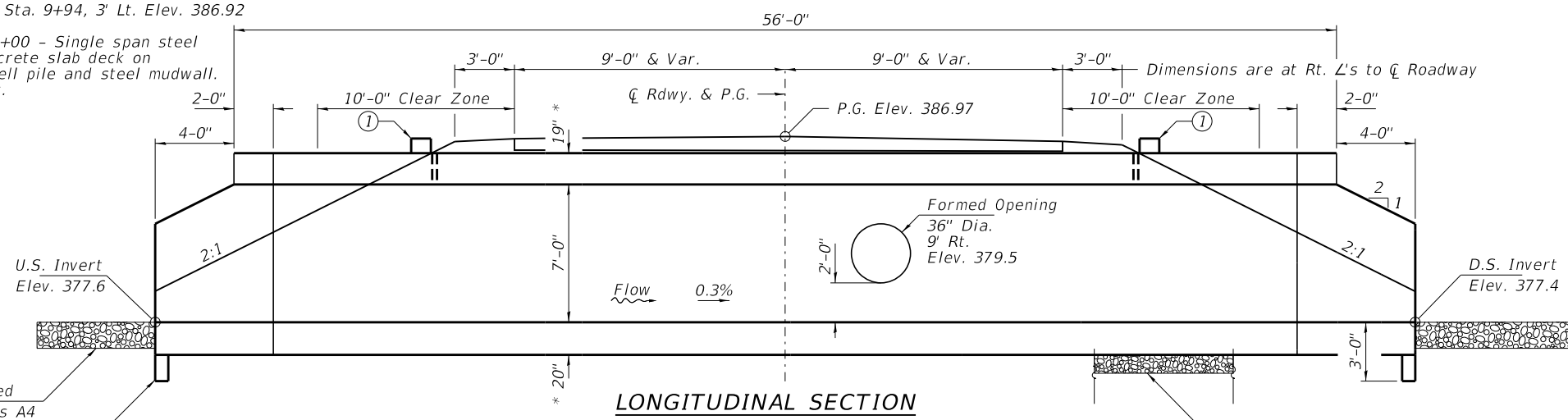
TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING
ROADWAY ARE TO BE CONSTRUCTED FROM STA. 10+50 TO STA. 11+00.

FILE NAME = 170547-shit-typsections.dgn	USER NAME = rhosick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS WHITE COUNTY HIGHWAY DEPARTMENT	TYPICAL CROSS SECTIONS			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		DRAWN - M.M.P.	REVISED -		SCALE:	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	881	15-00125-00-BR	WHITE	16	3
	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -					CONTRACT NO. 99628				
	PLOT DATE = 6/5/2019	DATE - 06/05/19	REVISED -					ILLINOIS FED. AID PROJECT 8C5U(883)				

BENCHMARK: Cotton Spindle = Sta. 9+94, 3' Lt. Elev. 386.92

EXISTING STRUCTURE - Sta. 10+00 - Single span steel I-beam bridge with precast concrete slab deck on closed abutments with metal shell pile and steel mudwall. 20.0' bk. - bk., 24.0' o. - o. deck.

No Salvage.



LONGITUDINAL SECTION

* Assumed dimension from ASTM C1577

Cut-off wall to be Precast or CIP concrete. Cost included with Precast End Sections.

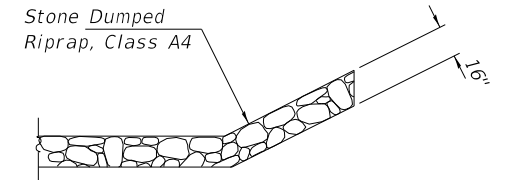
① Note: Precast Concrete Headwalls shall be installed along shoulder.

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

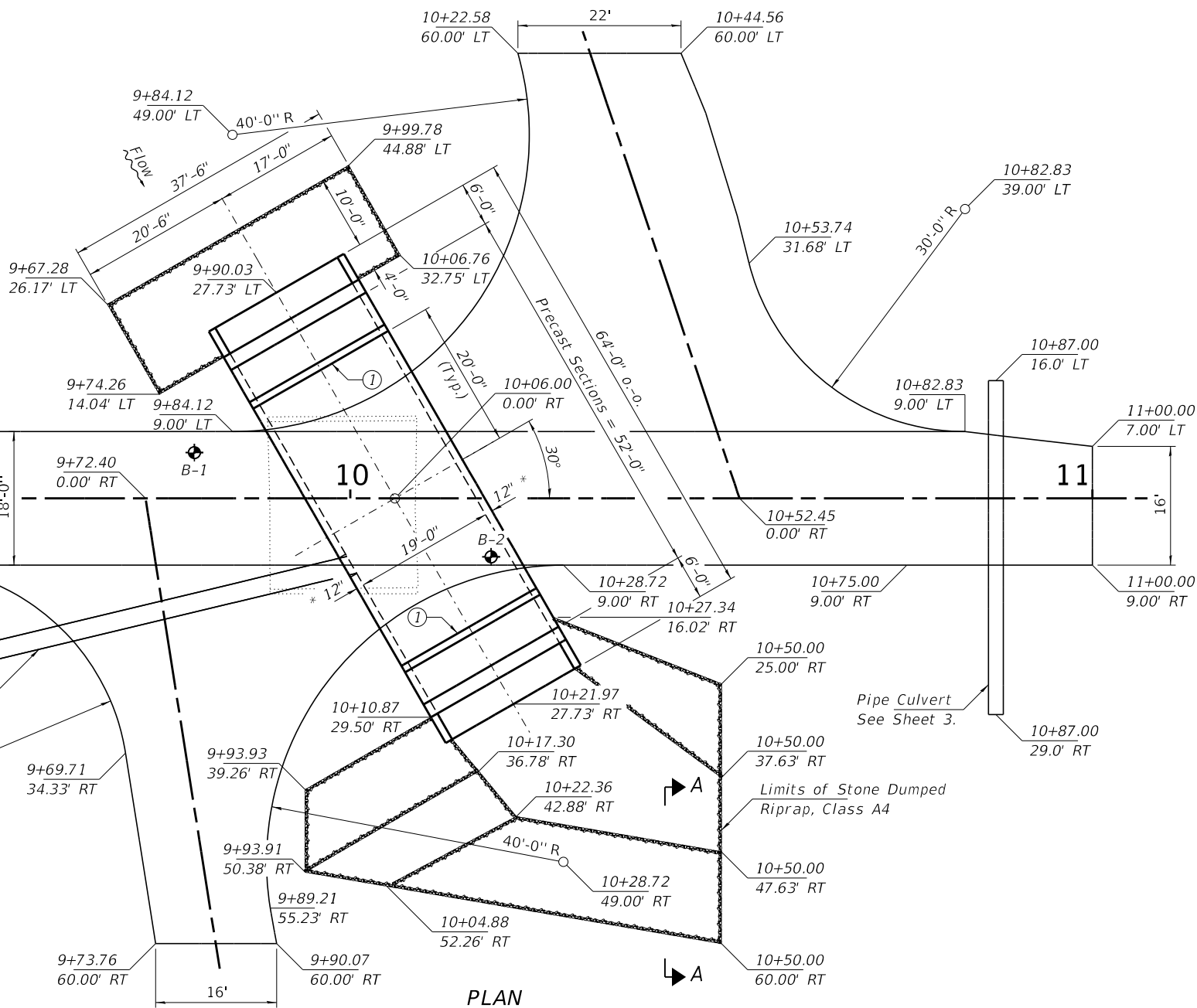
INDEX OF STRUCTURE SHEETS

1. General Plan and Elevation
2. Borings



SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4.

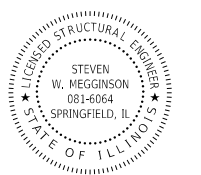


PLAN

Station	Size (Span x Height)	Skew	Design Fill (ft.)		PGE backfill required
			Edge of shldr. (minimum)	Maximum	
10+06	19'x7'	30°	0.4'	0.9'	Yes

I certify that to the best of my knowledge, information and belief, this culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO FD Specifications."

Steven W. Megginson 06/05/2019
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2020

DESIGN SPECIFICATIONS

2018 AASHTO LRFD Bridge Design Specifications, 8th Edition with all interims.

LOADING HL-93

Allow 50#/Sq. Ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stone Dumped Riprap, Class A4	Ton	200
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts (Special)	Foot	52
Porous Granular Embankment, Special	Ton	500
Porous Granular Backfill, Special	Cu. Yd.	60
Membrane Waterproofing for Buried Structures	Sq. Yd.	138

FILE NAME = 170547-stb-culvert.dgn
 USER NAME = rmosck
 HAMPTON, LENZINI AND RENWICK, INC.
 3035 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.000959

DESIGNED - J.W.F.
 CHECKED - S.W.M.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 PLOT SCALE =
 PLOT DATE = 6/5/2019

REVISOR -
 REVISION -
 REVISION -
 REVISION -

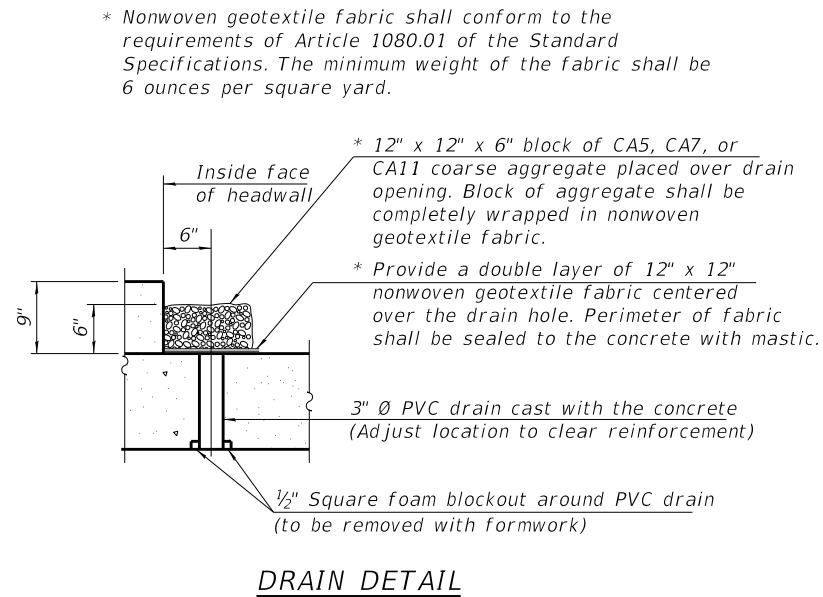
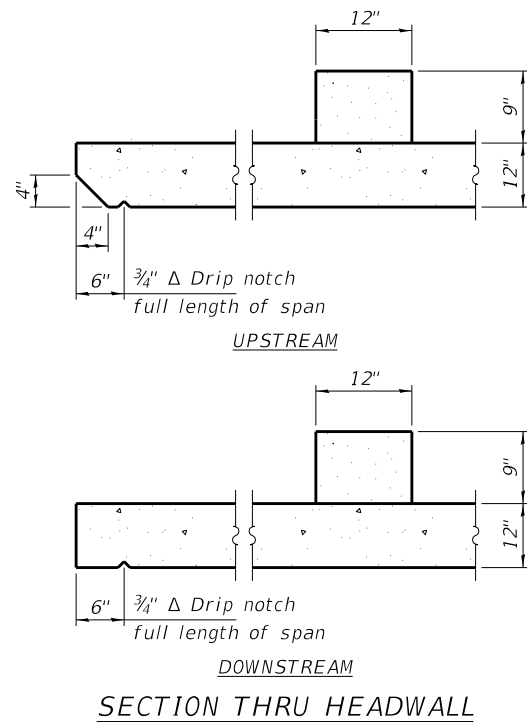
DESIGNED - J.W.F.
 CHECKED - S.W.M.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 PLOT SCALE =
 PLOT DATE = 6/5/2019

STATE OF ILLINOIS
 WHITE COUNTY HIGHWAY DEPARTMENT

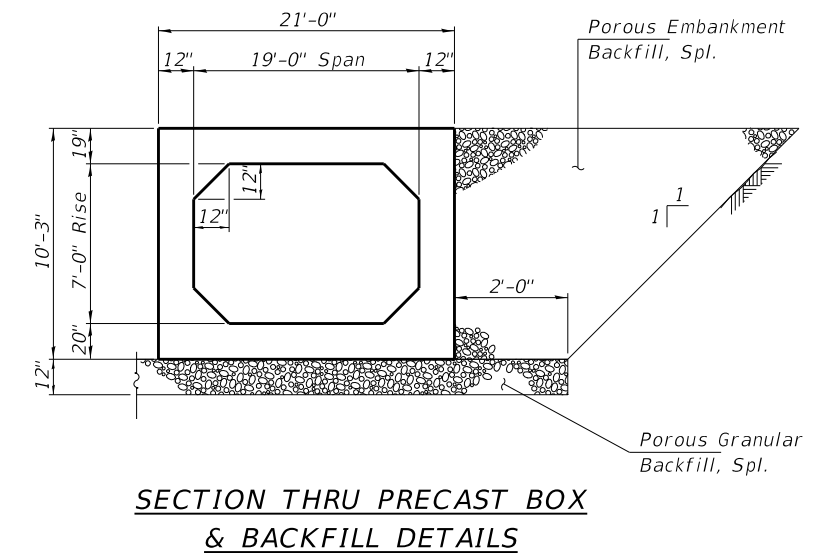
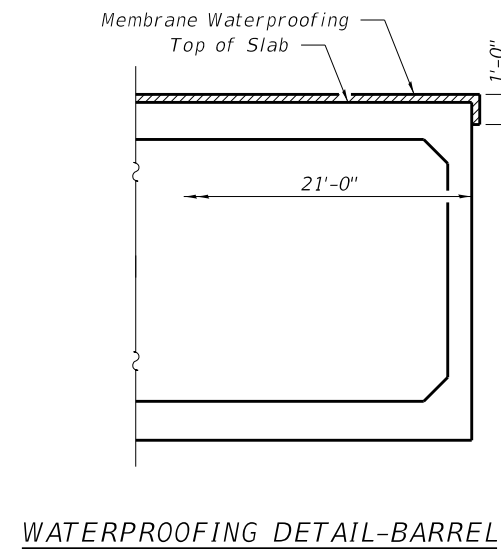
CULVERT DETAILS
 STRUCTURE NO. 097-4009
 SHEET NO. 1 OF 3 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881	15-00125-00-BR	WHITE	16	5

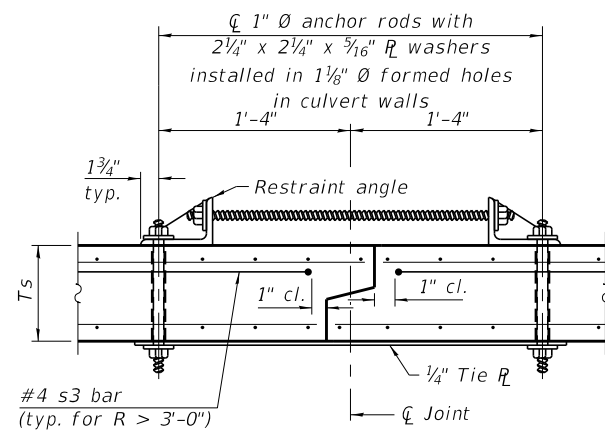
CONTRACT NO. 99628
 ILLINOIS FED. AID PROJECT 8C5U(883)



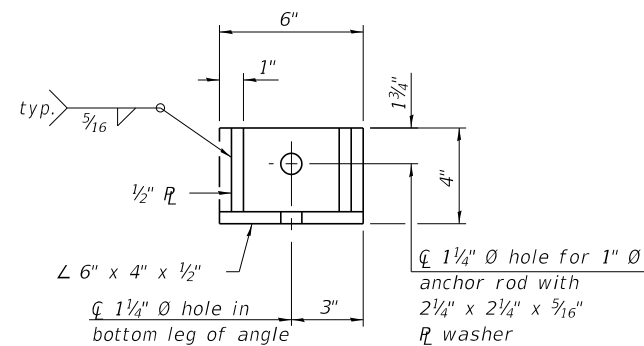
DRAIN DETAIL
 (All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



CULVERT TIES



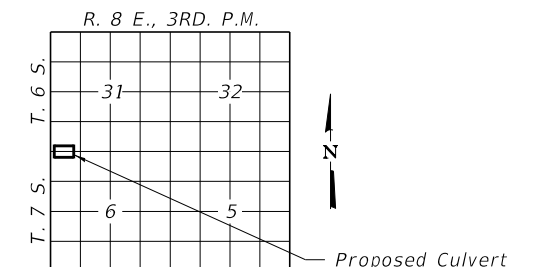
SECTION F-F
 (Showing culvert tie details)



RESTRAINT ANGLE DETAIL

BUILT 201_ BY
 WHITE COUNTY
 SEC. 15-00125-00-BR
 F.A.S. 881 / C.H. 18
 STR. NO. 097-4009
 LOADING HL-93

NAME PLATE
 See Std. 515001



LOCATION SKETCH

Notes:
 1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4"x2 1/4"x5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.
 Cost included with Precast Concrete Box Culverts.

WATERWAY INFORMATION

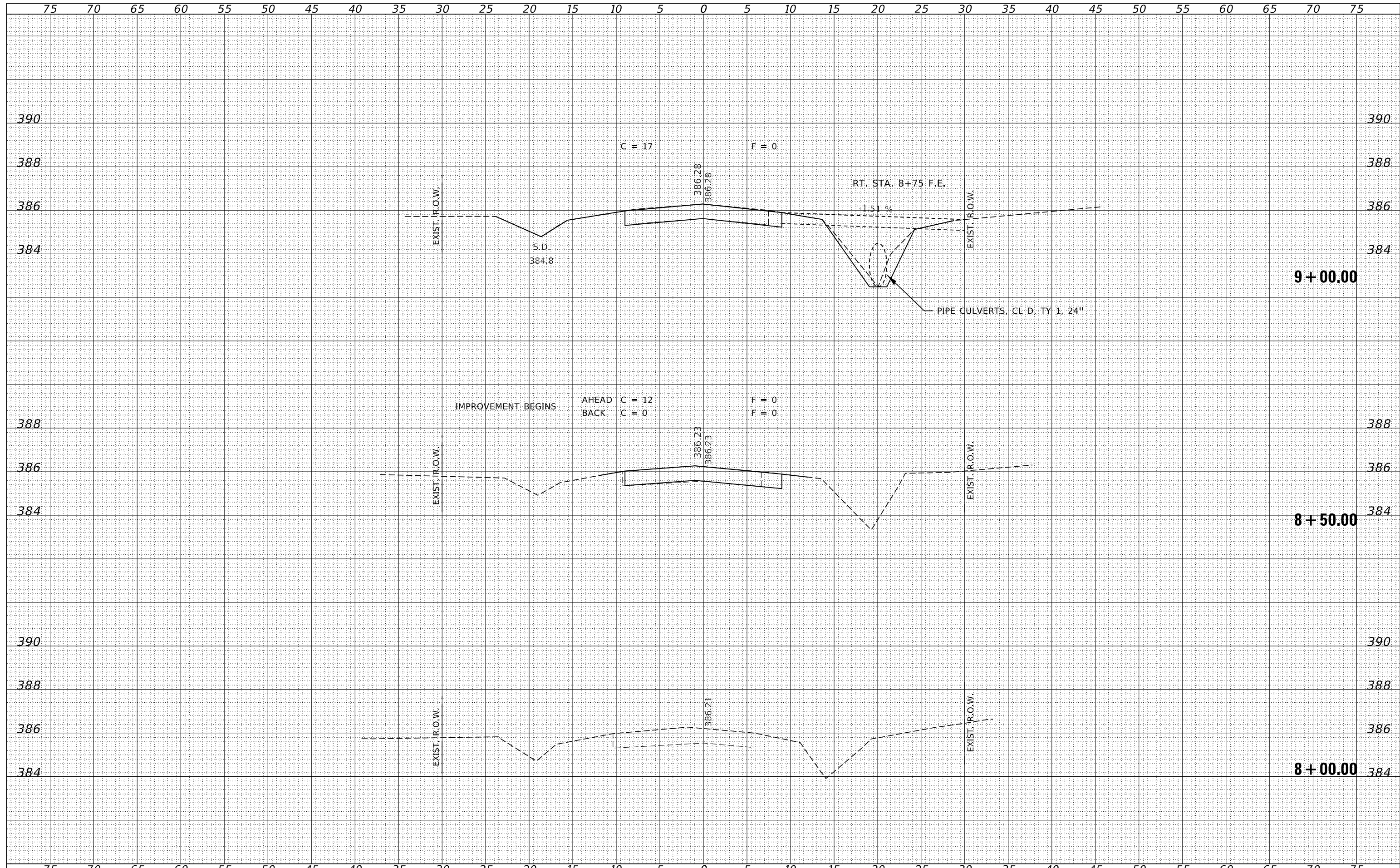
Drainage Area = 2.8 Sq. Mi. Existing Overtopping Elev. 384.7 @ Sta. 13+00 Proposed Overtopping Elev. 384.7 @ Sta. 13+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
	10	1280	95	133	385.72	0.06	0.00	385.78	385.72
Design	20	1620	95	133	385.99	0.10	0.01	386.09	386.00
Base	100	2520	95	133	386.60	0.03	0.00	386.63	386.60
Scour Check	200	2930	95	133	386.83	0.03	0.00	386.86	386.83
Max. Calc.	500	3540	95	133	387.12	0.03	0.00	387.15	387.12

10 Year Velocity through Existing Bridge = 13.5 fps 10 Year Velocity through Proposed Bridge = 9.6 fps

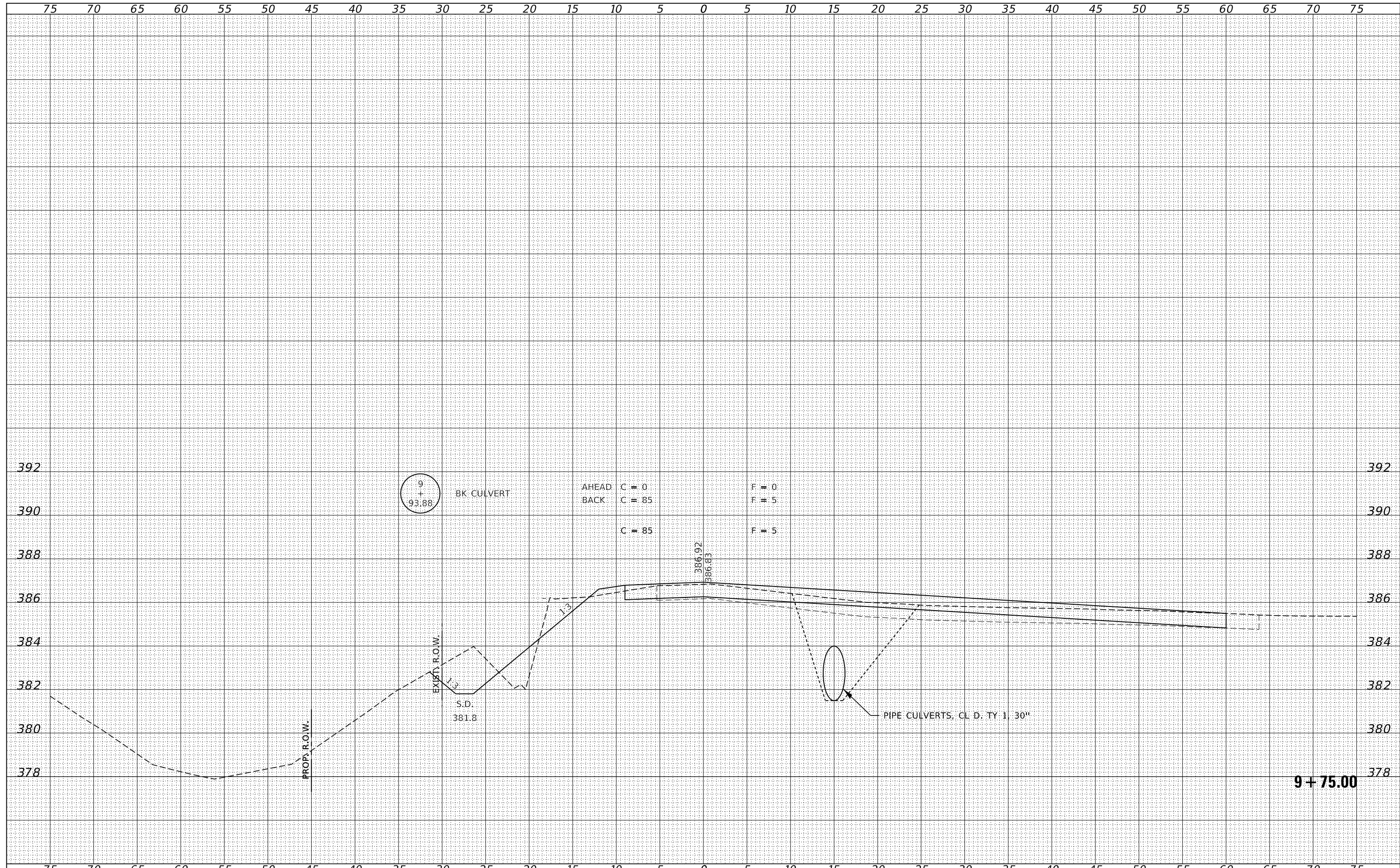
DATE	
BY	
FINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	



DATE	
BY	
SURVEYED	
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FINAL SURVEY	
NOTE BOOK	
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DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



FILE NAME = 170547-sh1-xsec.dgn
 USER NAME = mosick
 DESIGNED - J.W.F.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 DATE - 06/05/19
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 6/5/2019

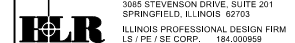
REVISIED -
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STATE OF ILLINOIS
 WHITE COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

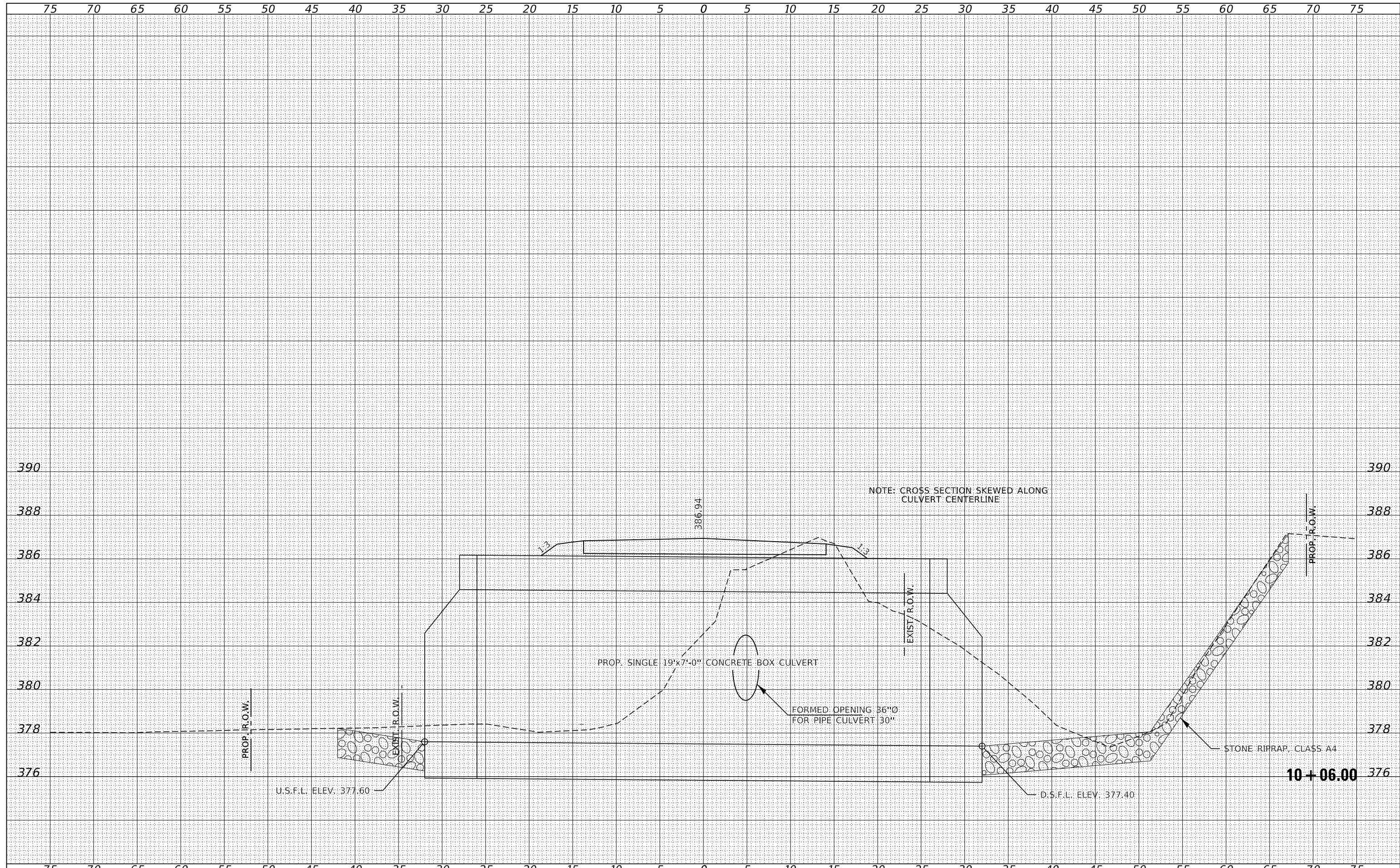
SCALE: 5H:2V SHEET NO. 4 OF 10 SHEETS STA. 9+75.00 TO STA. 9+75.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881	15-00125-00-BR	WHITE	16	10
CONTRACT NO. 99628				
ILLINOIS FED. AID PROJECT 8C5U(883)				



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	



FILE NAME = 170547-shl-xsec.dgn
 USER NAME = mosck
 DESIGNED - J.V.F.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 DATE - 06/05/19
 PLOT SCALE = \$Scales
 PLOT DATE = 6/5/2019

DESIGNED - J.V.F.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 DATE - 06/05/19

REVISED -
 REVISED -
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 REVISED -

**STATE OF ILLINOIS
 WHITE COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS

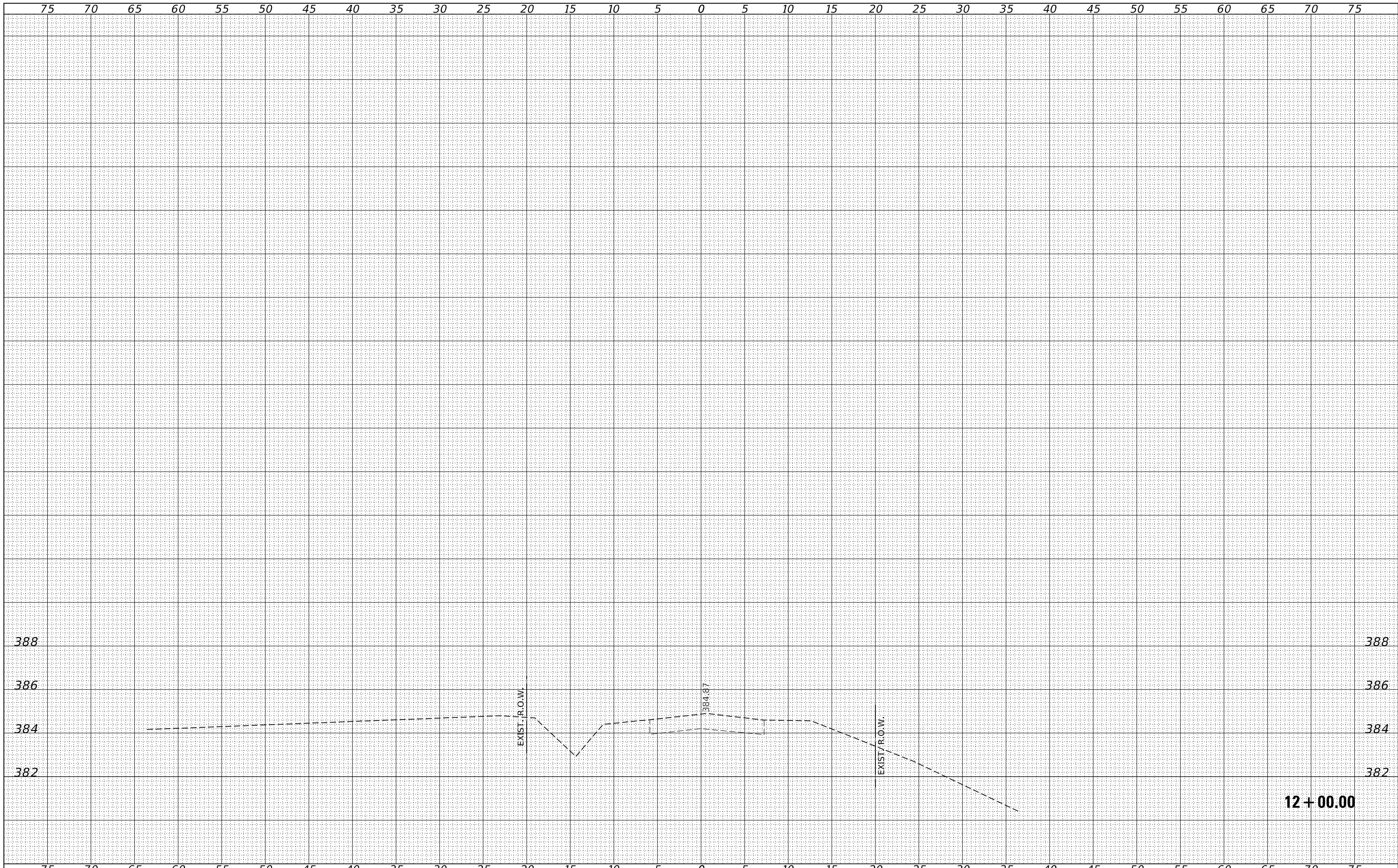
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 SHEET NO. 5 OF 10 SHEETS
 STA. 10+06.00 TO STA. 10+06.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881	15-00125-00-BR	WHITE	16	11
CONTRACT NO. 99628				

ILLINOIS FED. AID PROJECT 8C5U(883)

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED
	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED
	AREAS CHECKED



FILE NAME = 170547-shl-xsec.dgn
 USER NAME = rmosck
 DESIGNED - J.V.F.
 DRAWN - M.M.P.
 CHECKED - S.W.M.
 DATE - 06/05/19
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 6/5/2019

REVISIED -
 REVISIED -
 REVISIED -
 REVISIED -

STATE OF ILLINOIS
 WHITE COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

SCALE: 5H:2V SHEET NO. 10 OF 10 SHEETS STA. 12+00.00 TO STA. 12+00.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
881	15-00125-00-BR	WHITE	16	16
CONTRACT NO. 99628				
ILLINOIS FED. AID PROJECT 8C5U(883)				

